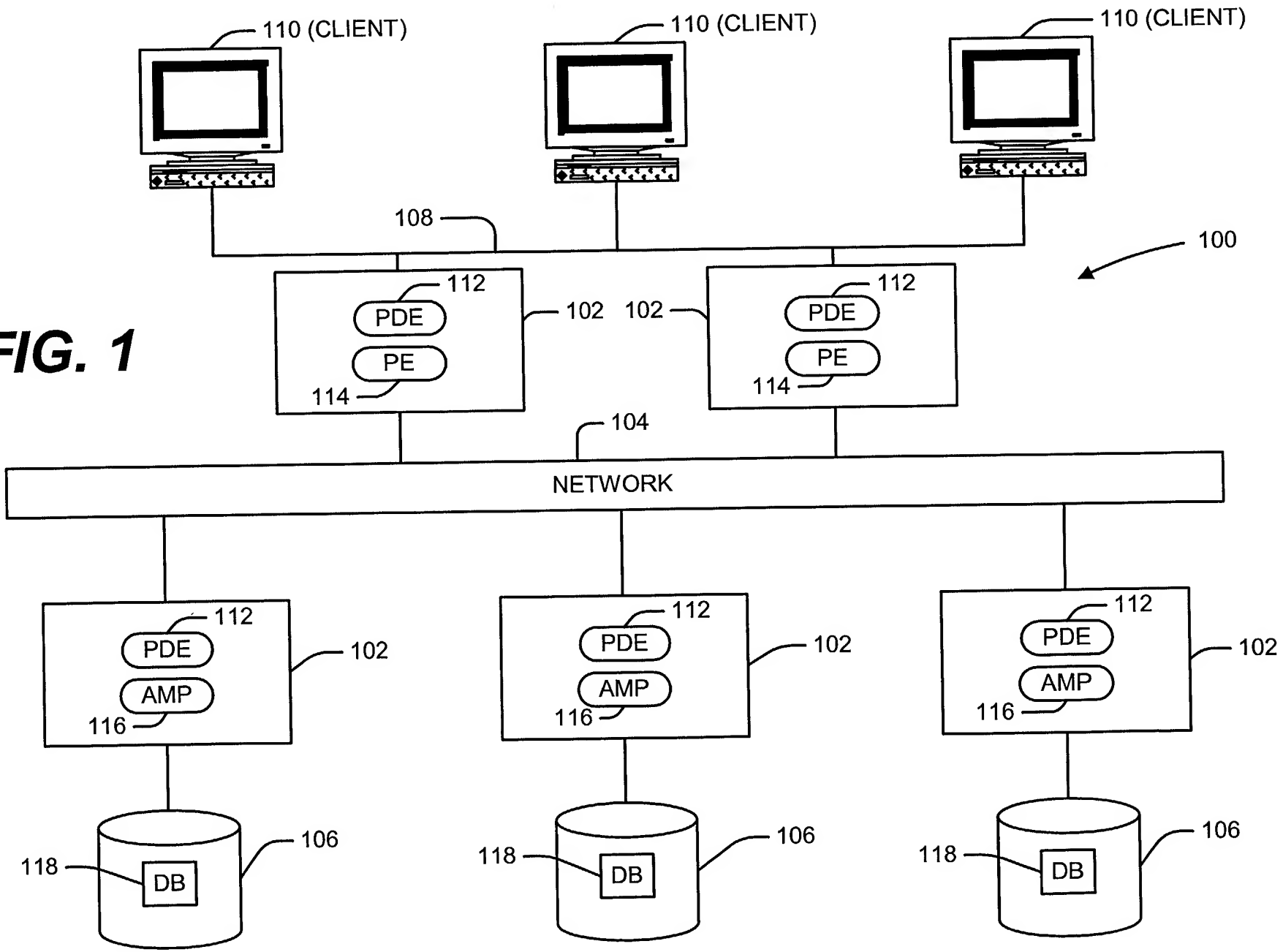
Express Mail #EV067266328US
Filed: 12/31/01; File No. NCR 10237
Inventor: Ramesh Bhashyam
For: Optimizing an Outer Join ...
Contact: John D. Cowart/858-485-4903
Sheet 1 of 6

FIG. 1



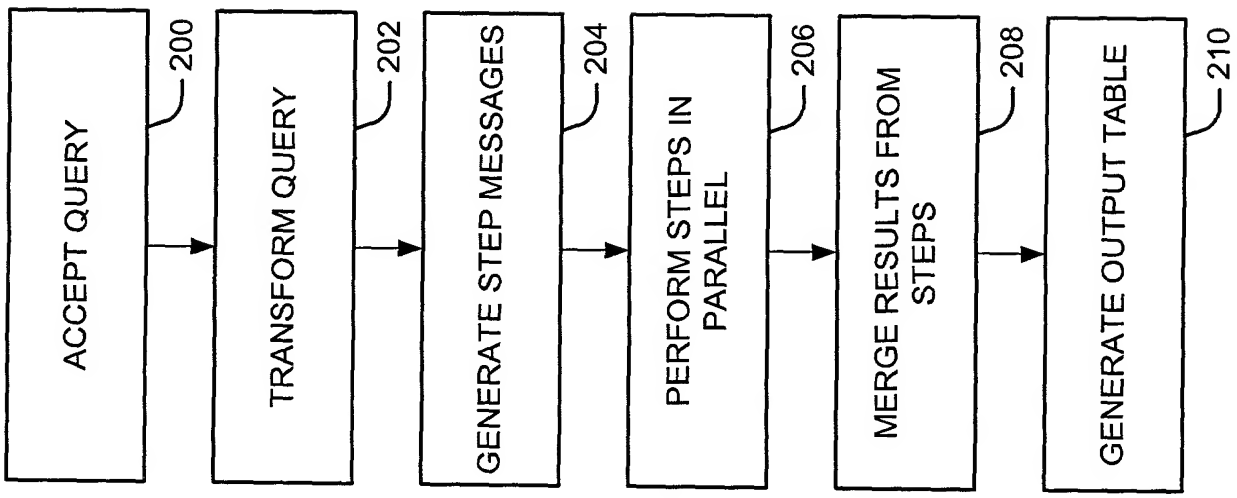

ACCEPT QUERY
200
TRANSFORM QUERY
202
GENERATE STEP MESSAGES
204
PERFORM STEPS IN PARALLEL
206
MERGE RESULTS FROM STEPS
208
GENERATE OUTPUT TABLE
210

FIG. 2

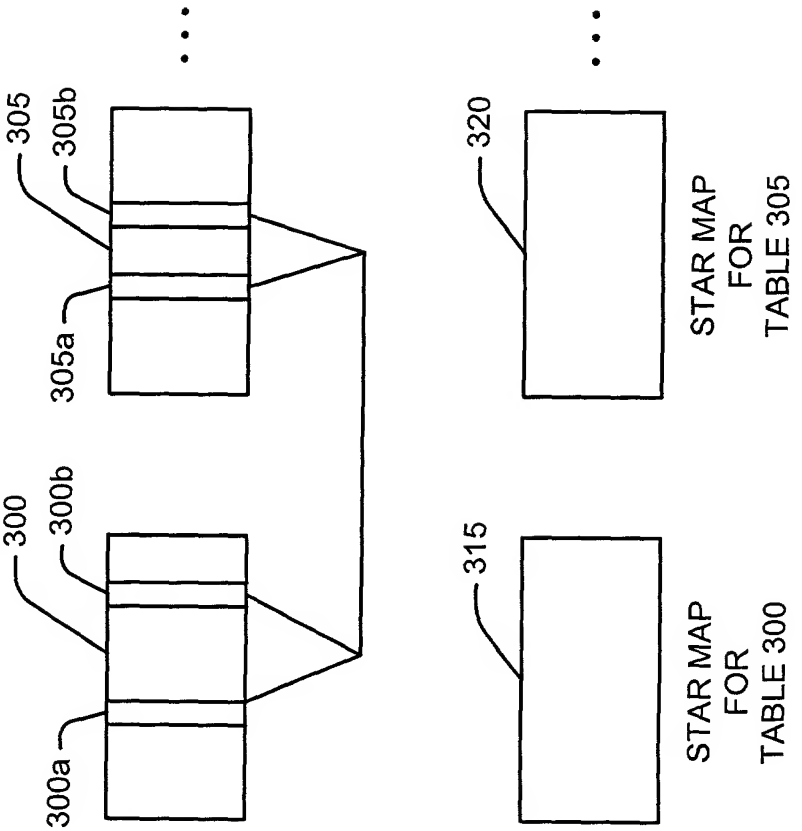

300
300b
300a
305
305b
305a
315
STAR MAP FOR TABLE 300
320
STAR MAP FOR TABLE 305

FIG. 3

TOTE2T" 6h88E0T

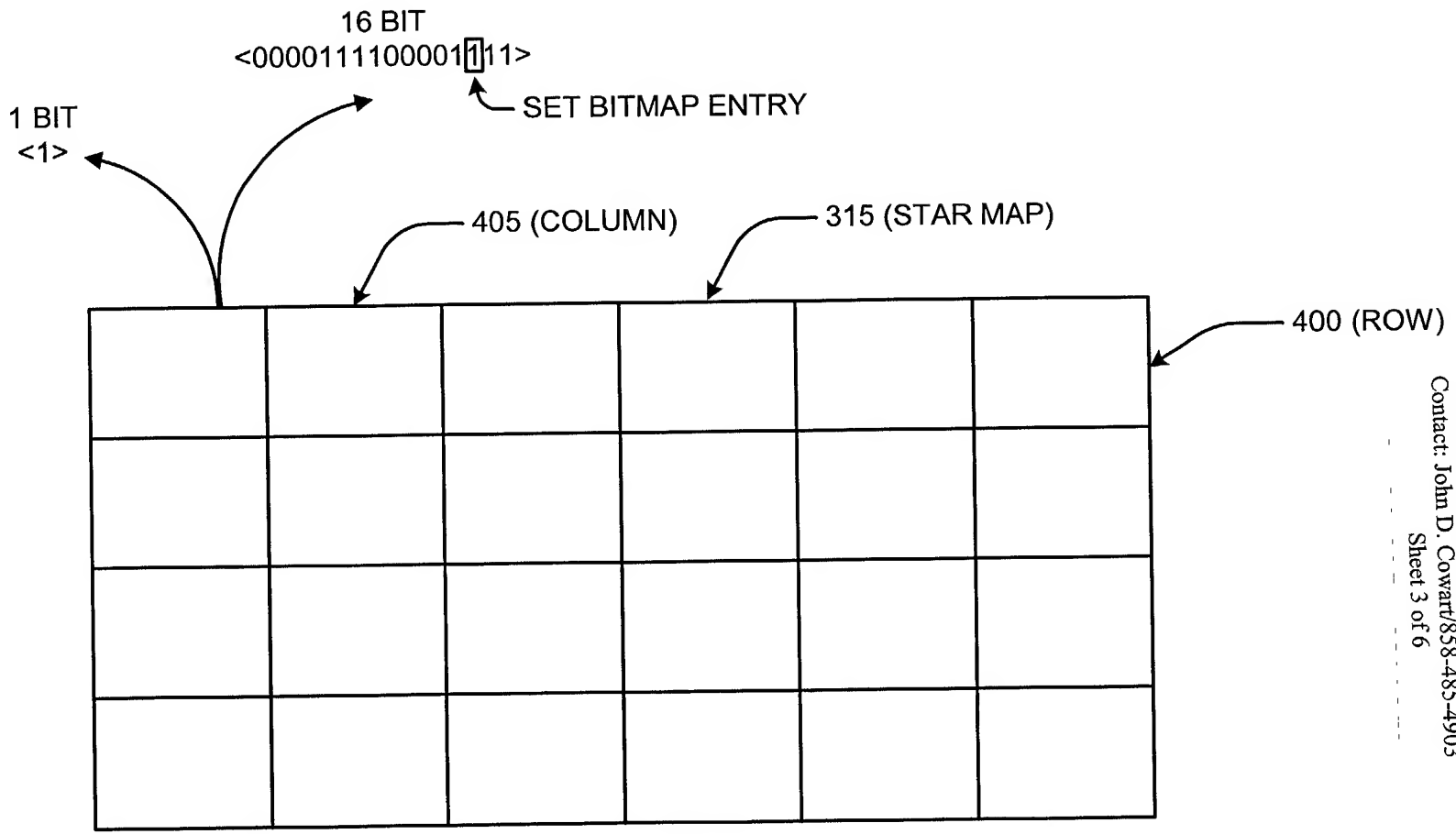


FIG. 4

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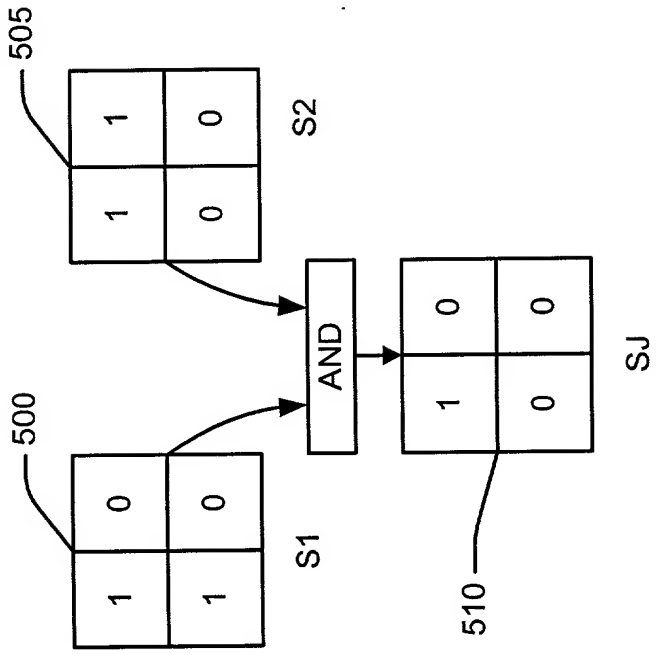

FIG. 5

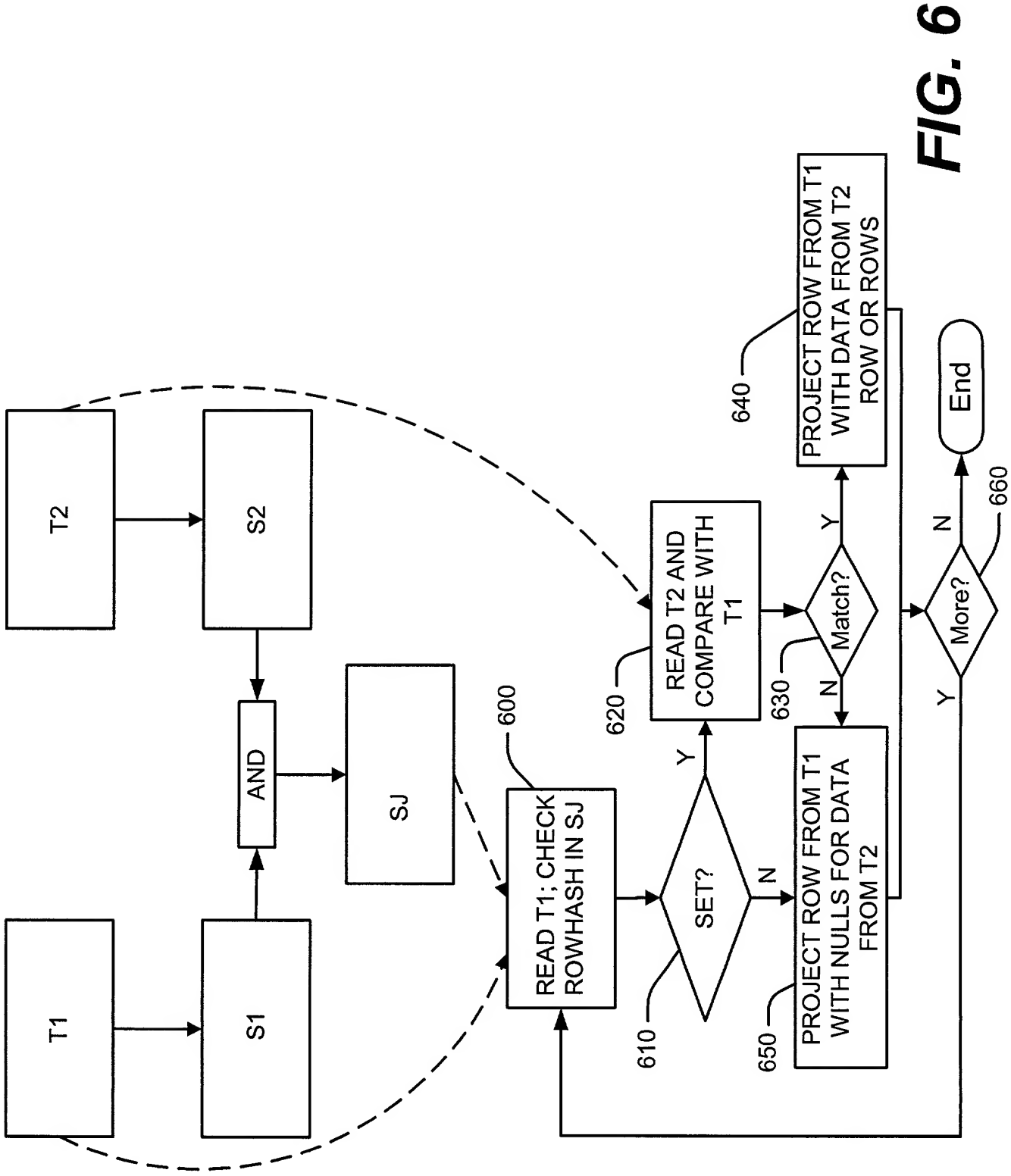
T1
T2
S1
S2
AND
SJ
600
READ T1; CHECK ROWHASH IN SJ
610
SET?
Y
N
620
READ T2 AND COMPARE WITH T1
630
Match?
Y
N
640
PROJECT ROW FROM T1 WITH DATA FROM T2 ROW OR ROWS
650
PROJECT ROW FROM T1 WITH NULLS FOR DATA FROM T2
660
More?
Y
N
End

FIG. 6

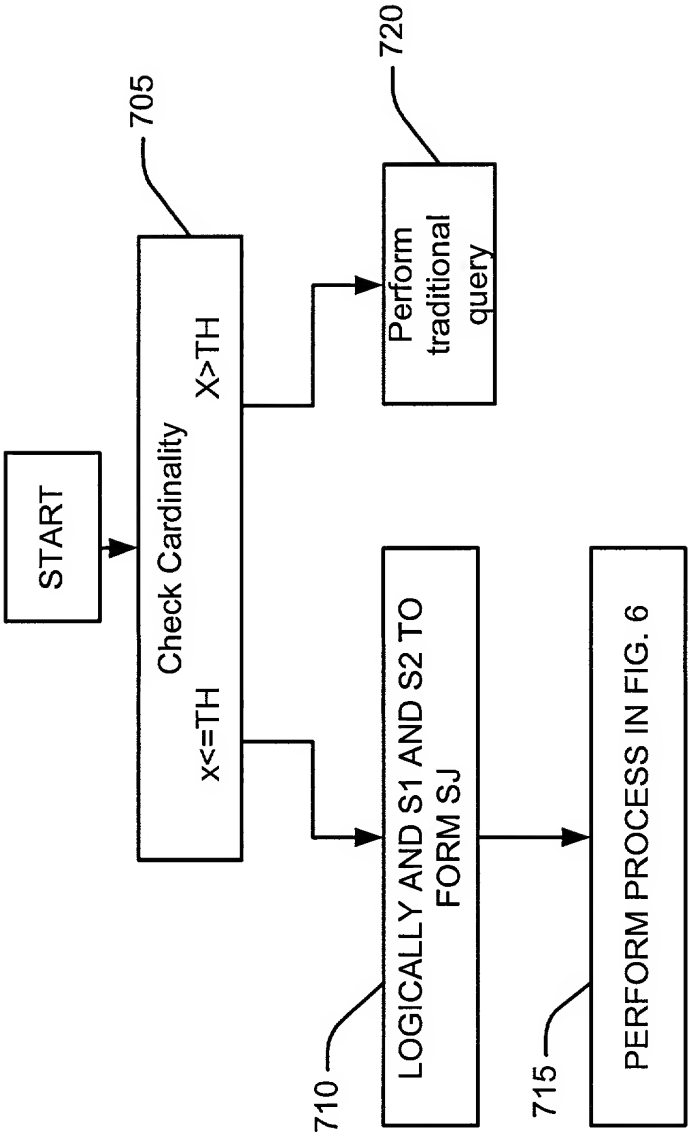
START
Check Cardinality
X>TH
x<=TH
705
720
Perform traditional query
710
LOGICALLY AND S1 AND S2 TO FORM SJ
715
PERFORM PROCESS IN FIG. 6

FIG. 7